

1 1. A system for remote testing the ready status of fluorescent type emergency lighting fixture
2 including a standard ballast for providing power to a fluorescent lamp while normal AC power is
3 supplied to the standard ballast and an emergency ballast for supplying battery sourced current to the
4 fluorescent lamp when normal AC power is interrupted, wherein the improvement includes an infrared
5 signaled test circuit comprising:

6
7 a) a rectifier charging circuit adapted to be connected to be powered by the primary AC
8 power supply to the standard fluorescent ballast during normal operation of the primary AC power
9 supply, said charging circuit disconnectably connected to said battery while the primary AC power
10 supply is providing AC power to the lighting circuit;

11
12 b) an inverter disconnectably connected to said battery upon disenabling of said rectifier
13 charging circuit charging said battery, the output of said inverter switchably oscillating the voltage
14 of said battery to create an AC output current at said battery voltage, and including a transformer to
15 step up said inverter created AC voltage to a predetermined level to operate the fluorescent lamp, said
16 inverter disconnectably connected to the fluorescent lamp during the period said inverter is powered
17 by said battery;

18
19 c) a test circuit including an infrared detector for receiving a pulse-time coded infrared
20 signal; a microcontroller programmed to provide an output in response to a selected pulse-time coded
21 infrared signal, and switch means operated by the output of said microcontroller to disenable said
22 rectifier charging circuit for a predetermined period of time;

23
24 whereby upon receipt of the selected pulse-time coded infrared signal, said inverter is
25 selectably connected to said battery upon activation of said test system to provide lighting from the
26 emergency lighting fixture testing the fixture's ready status.

2. The remote test system according to claim 1 wherein said microcontroller is programmed to
provide an output responsive only to a repeated selected pulse-time coded infrared signal.

1 3. The remote test system according to claim 1 wherein said microcontroller is programmed to
2 provide an output responsive to a selected pulse time coded signal having a carrier frequency in the
3 range of about 319 THz ± five percent.

1 4. The remote test system according to claim 3 wherein the carrier frequency is modulated by
2 a sub-carrier frequency of digital pulses in the range of about 38 KHz ± five percent.

1 5. A system for remote testing the ready status of fluorescent type emergency lighting fixture
2 including a standard ballast for providing power to a fluorescent lamp while normal AC power is
3 supplied to the standard AC ballast and an emergency ballast for supplying battery sourced current
4 to the fluorescent lamp when normal AC power is interrupted, wherein the improvement includes an
5 infrared detector, infrared remote control signaler and a microprocessor connected to said detector
6 for processing the output of the infrared detector, the improvement comprising:

7 an infrared detector mounted in the fluorescent lighting fixture for providing an electrical
8 output in response to input from an infrared remote controller;

9 microcontroller means electrically connected to the output of said infrared detector, said
10 microcontroller means powered by normal AC power supplied to the standard AC ballast, and
11 responsive to electrical output of said infrared detector to initiate test operation of the emergency
12 operation of said fluorescent by simulating AC power supply interruption to the battery charge circuit
13 of the emergency ballast causing said emergency ballast to supply battery powered a-c power to the
14 fluorescent lamp thereby illuminating the lamp.

1 6. The remote test system according to claim 5 wherein said infrared detector is mounted in a
2 shielded housing disposed in the lighting fixture and the shielding of said housing is electrically
3 connected to said microcontroller means.

1 7. The remote test system according to claim 5 wherein said infrared detector is electrically
2 connected to said microcontroller means by a shielded cable, and said cable shielding is electrically

1 connected to said microcontroller means.

1 8. The remote test system according to claim 7 wherein said shielding of said shielded cable is
2 electrically connected to said shielding of said shielded housing for said infrared detector.

1 9. The remote test system according to claim 8 wherein said infrared detector is adapted with
2 a conductive case and said case is electrically connected to said shielding of said housing and said
3 cable shielding.

1 10. The remote test system according to claim 5 wherein said infrared detector is mounted in the
2 light fixture in an infrared detector housing comprising:

3 a) a substantially cylindrical shell having a central bore therethrough, a detector mounting
4 section disposed within said central bore at one end of said shell;

5 b) a cable receiving section disposed within said central bore at the other end of said shell;

6 c) said detector being fixedly mounted in the central bore of said detector mounting
7 section whereby said detector is positioned in a recessed relation to the open end of said central bore
8 of said detector mounting section;

9 d) a cable for conveying the electrical output of said detector to said microcontroller
10 circuit means, one end of said cable being closely received within the central bore of said cable
11 receiving section of said detector housing and electrically connected to the output of said detector,
12 said cable being electrically connected at the other end thereof to said microcontroller circuit means.

1 11. The remote test system according to claim 10 wherein said cable includes an electrically
2 conductive shielding and said shielding is connected to a ground potential terminal on said
3 microcontroller circuit means.

1 12. The remote test system according to claim 10 wherein said central bore of said detector
2 mounting section is lined with an electrically conductive shielding and said shielding is electrically
3 connected to a ground potential terminal on said microcontroller circuit means.

1 13. The remote test system according to claim 12 wherein said electrically conductive shielding
2 of said cable is electrically connected to said detector mounting section shielding and said ground
3 potential terminal.

1 14. The remote test system according to claim 13 wherein said infrared detector is adapted with
2 a conductive case and said case is electrically connected to said shielding of said housing and said
3 cable shielding and said ground potential terminal.

1 15. An infrared wavelength remote control signaling system for activation of microcontroller
2 circuit means comprising:

3 a) an infrared detector for providing an electrical signal output in response to an infrared
4 remote controller command signal;

5 b) a substantially cylindrical shell having a central bore therethrough including a detector
6 mounting section disposed within said central bore at one of said shell;

7 c) said cylindrical shell having a cable receiving section disposed within said central bore
8 at the other end of said shell;

9 d) said detector being fixedly mounted in the central bore of said detector mounting
10 section, disposed in recessed relation to the open end of said central bore in said shell;

11 e) a cable for conveying the electrical signal output of said detector to said
12 microcontroller circuit means, said cable being closely received within the central bore of the cable
13 receiving section of said detector housing, said cable being electrically connected at one end thereof
14 to the electrical output of said detector and electrically connected at the other end thereof to said
15 microcontroller circuit means.

1 16. The remote test system according to claim 15 wherein said cable is a shielded cable and said
2 shielding is electrically connected to a ground potential terminal in said microcontroller circuit means.

1 17. The remote test system according to claim 15 wherein said central bore of said detector
2 mounting section is lined with an electrically conductive shielding and said shielding is electrically
3 connected to a ground potential terminal in said microcontroller circuit means.

1 18. The remote test system according to claim 17 wherein said shielding of said detector mounting
2 section is electrically connected to the shielding of said cable and to the ground potential terminal of
3 said microcontroller circuit means.

1 19. The remote test system according to claim 18 wherein said infrared detector is adapted with
2 a conductive case and said case is electrically connected to said shielding of said housing and said
3 cable shielding.